

## CLAYS

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** In 2008, clay and shale production was reported in 41 States. About 190 companies operated approximately 830 clay pits or quarries. The leading 20 firms supplied about 50% of the tonnage and 80% of the value for all types of clay sold or used in the United States. In 2008, sales or use was estimated to be 33.2 million tons valued at \$1.73 billion. Major uses for specific clays were estimated to be as follows: ball clay—38% floor and wall tile, 24% sanitaryware, and 38% other uses; bentonite—26% absorbents, 23% drilling mud, 17% foundry sand bond, 14% iron ore pelletizing, and 20% other uses; common clay—57% brick, 19% lightweight aggregate, 14% cement, and 10% other uses; fire clay—58% heavy clay products, 42% refractory products and other uses; fuller's earth—66% absorbent uses and 34% other uses; and kaolin—62% paper and 38% other uses.

<b>Salient Statistics—United States:<sup>1</sup></b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008<sup>e</sup></b>
Production, mine:					
Ball clay	1,220	1,210	1,190	1,070	964
Bentonite	4,550	4,710	4,940	4,820	4,870
Common clay	24,600	24,300	24,200	20,600	17,500
Fire clay	307	353	848	565	508
Fuller's earth	3,260	2,730	2,540	2,660	2,630
Kaolin	7,760	7,800	7,470	7,110	6,750
Total <sup>2</sup>	41,700	41,200	41,200	36,800	33,200
Imports for consumption:					
Artificially activated clay and earth	25	17	21	23	22
Kaolin	205	262	303	194	70
Other	21	22	22	14	19
Total <sup>2</sup>	251	301	346	231	111
Exports:					
Ball clay	107	141	140	83	70
Bentonite	915	847	1,270	1,430	1,200
Fire clay <sup>3</sup>	332	368	348	425	390
Fuller's earth	49	55	69	134	140
Kaolin	3,640	3,580	3,540	3,300	3,000
Clays, not elsewhere classified	586	634	607	279	400
Total <sup>2</sup>	5,630	5,620	5,980	5,650	5,200
Consumption, apparent	36,300	35,900	35,600	31,400	28,100
Price, average, dollars per ton:					
Ball clay	44	44	44	46	47
Bentonite	45	46	48	52	53
Common clay	7	7	10	11	11
Fire clay	28	30	22	42	43
Fuller's earth	101	100	96	97	100
Kaolin	121	110	131	135	142
Employment, number: <sup>e</sup>					
Mine	1,080	990	1,250	1,150	900
Mill	4,910	4,940	5,130	5,080	4,850
Net import reliance <sup>4</sup> as a percentage of apparent consumption	E	E	E	E	E

**Recycling:** Insignificant.

**Import Sources (2004-07):** Brazil, 80%; Mexico, 5%; United Kingdom, 4%; Canada, 3%; and other, 8%.

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<b>Tariff:</b> Item	Number	Normal Trade Relations <b>12-31-08</b>
Kaolin and other kaolinitic clays, whether or not calcined	2507.00.0000	Free.
Bentonite	2508.10.0000	Free.
Fire clay	2508.30.0000	Free.
Common blue clay and other ball clays	2508.40.0110	Free.
Decolorizing and fuller's earths	2508.40.0120	Free.
Other clays	2508.40.0150	Free.
Chamotte or dina's earth	2508.70.0000	Free.
Activated clays and earths	3802.90.2000	2.5% ad val.
Expanded clays and other mixtures	6806.20.0000	Free.

**Depletion Allowance:** Ball clay, bentonite, fire clay, fuller's earth, and kaolin, 14% (Domestic and foreign); clay used in the manufacture of common brick, lightweight aggregate, and sewer pipe, 7.5% (Domestic and foreign); clay used in the manufacture of drain and roofing tile, flower pots, and kindred products, 5% (Domestic and foreign); and clay used for alumina and aluminum compounds, 22% (Domestic).

**Government Stockpile:** None.

**Events, Trends, and Issues:** Slowing U.S. construction markets resulted in a decline in production of ball clay, common clay, and fire clay. Bentonite production increased slightly, largely on the strength of the market for drilling mud. Kaolin production declined because of competition with kaolin from Brazil, a lower demand in world paper markets, and lower U.S. construction activity. Fuller's earth markets remained strong, so production was almost unchanged from that of 2007.

**World Mine Production, Reserves, and Reserve Base:**<sup>5</sup> Reserves and reserve base are large in major producing countries, but data are not available.

	Bentonite		Mine production Fuller's earth		Kaolin	
	2007	2008 <sup>e</sup>	2007	2008 <sup>e</sup>	2007	2008 <sup>e</sup>
United States (sales)	4,820	4,870	2,660	2,630	7,110	6,750
Brazil (beneficiated)	240	240	—	—	2,500	2,490
Commonwealth of Independent States (crude)	750	750	—	—	6,170	6,200
Czech Republic (crude)	220	220	—	—	3,800	3,800
Germany (sales)	365	385	—	—	3,800	3,850
Greece (crude)	950	950	—	—	60	60
Italy (kaolinitic earth)	600	600	3	3	584	580
Korea, Republic of (crude)	—	—	—	—	2,630	2,600
Mexico	435	435	102	100	962	960
Spain	105	105	870	870	450	450
Turkey	930	930	—	—	580	580
United Kingdom	—	—	—	—	1,800	1,750
Other countries	2,490	2,520	255	297	8,550	8,630
World total (rounded)	11,900	12,000	3,890	3,900	39,000	38,700

**World Resources:** Resources of all clays are extremely large.

**Substitutes:** Alternatives, such as calcium carbonate and talc, are available for filler and extender applications.

<sup>e</sup>Estimated. E Net exporter. — Zero.

<sup>1</sup>Excludes Puerto Rico.

<sup>2</sup>Data may not add to totals shown because of independent rounding.

<sup>3</sup>Also includes some refractory-grade kaolin.

<sup>4</sup>Defined as imports – exports.

<sup>5</sup>See Appendix C for definitions.